Title: NON-LINEAR ADAPTIVE VOLTAGE POSITIONING FOR DC-DC CONVERTERS

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1. A method of providing a voltage from a DC-DC converter such that the voltage provided varies dependent on the current drawn from the DC-DC converter, comprising:

sensing a current drawn from the DC-DC converter; and

adjusting the voltage provided from the DC-DC converter such that the voltage is at a maximum current voltage level when the current drawn is at a maximum load current level and the voltage is at a minimum current voltage level when the current drawn is at a minimum but nonzero load current level.

- 2. The method of claim 1, further comprising adjusting the voltage provided from the DC-DC converter to provide a substantially linear voltage response with respect to current drawn between the maximum load current level and the minimum load current level.
- 3. The method of claim 1, further comprising adjusting the voltage provided from the DC-DC converter such that the voltage is at the minimum current voltage level when the current drawn is below the minimum load current level.
- 4. The method of claim 1, wherein the minimum load current level is the minimum current drawn by a known load device having a minimum current draw of greater than no current.
- 5. The method of claim 1, wherein the minimum load current level is a selected current level between but not including no current and the maximum load current level.
- 6. The method of claim 1, wherein sensing a current drawn from the DC-DC converter comprises sensing the voltage across a current sensing resistor connected in series with an output of the DC-DC converter.
- 7. A method of providing a voltage from a DC-DC converter such that the voltage provided varies dependent on the current drawn from the DC-DC converter, comprising: sensing an output current drawn from the DC-DC converter;

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converting the sensed output current to a voltage signal indicating the sensed output current;

adjusting the voltage signal indicating the sensed output current such that the voltage is at a minimum level when the current drawn is at a maximum load current level and the voltage is at a maximum level when the current drawn is at a minimum but nonzero load current level; and adding the adjusted voltage signal to the voltage provided by the DC-DC converter.

8. A method of providing a voltage from a DC-DC converter such that the voltage provided varies dependent on the current drawn from the DC-DC converter, comprising:

sensing an output current drawn from the DC-DC converter;

converting the sensed output current to a voltage signal indicating the sensed output current;

adjusting the voltage signal indicating the sensed output current such that the voltage is at a maximum current voltage level when the current drawn is at a maximum load current level and the voltage is at a minimum current voltage level when the current drawn is at a minimum but nonzero load current level; and

subtracting the adjusted voltage signal from the voltage provided by the DC-DC converter.

## 9. A DC-DC converter, comprising:

a module operable to sense a current drawn from the DC-DC converter and further operable to adjust the voltage provided from the DC-DC converter such that the voltage is at a maximum current voltage level when the current drawn is at a maximum load current level and the voltage is at a minimum current voltage level when the current drawn is at a minimum but nonzero load current level.

The DC-DC converter of claim 9, wherein adjusting the voltage in response to the sensed 10. current is performed via hardware.

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- 11. The DC-DC converter of claim 9, wherein adjusting the voltage in response to the sensed current is performed via software executing on a processor.
- 12. The DC-DC converter of claim 9, wherein sensing a current drawn from the DC-DC converter comprises measuring the voltage across a current sensing resistor connected in series with an output of the DC-DC converter.
- 13. The DC-DC converter of claim 9, wherein the module is further operable to provide a substantially linear voltage response with respect to current drawn between the maximum load current level and the minimum load current level.
- 14. The DC-DC converter of claim 9, wherein the module is further operable to provide a voltage at the minimum current voltage level when the current drawn is below the minimum load current level.
- 15. The DC-DC converter of claim 9, wherein the minimum load current level is the minimum current drawn by a known load device having a minimum current draw of greater than no current.
- 16. The DC-DC converter of claim 9, wherein the minimum load current level is a selected current level between but not including no current and the maximum load current level.

## <u>REMARKS</u>

Applicant has carefully reviewed and considered the Office Action mailed on August 27, 2001, and the references cited therewith.

No claims are amended, cancelled, or added; as a result, claims 1-16 are now pending in this application.